

(12) **United States Patent**
Rudisill et al.

(10) **Patent No.:** **US 9,300,081 B2**
(45) **Date of Patent:** **Mar. 29, 2016**

(54) **INTERPOSER CONNECTORS WITH
MAGNETIC COMPONENTS**

USPC 439/39
See application file for complete search history.

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(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 233 days.

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(21) Appl. No.: **13/910,132**

(22) Filed: **Jun. 5, 2013**

Primary Examiner — Neil Abrams

(65) **Prior Publication Data**

US 2013/0273752 A1 Oct. 17, 2013

Related U.S. Application Data

(63) Continuation-in-part of application No. 13/105,091,
filed on May 11, 2011, now abandoned, and a
continuation-in-part of application No. 12/698,731,
filed on Feb. 2, 2010, now Pat. No. 8,187,006.

(60) Provisional application No. 61/786,037, filed on Mar.
14, 2013, provisional application No. 61/655,483,
filed on Jun. 5, 2012.

(51) **Int. Cl.**

H01R 11/30 (2006.01)
H01R 13/62 (2006.01)
H01R 13/645 (2006.01)
H04M 1/02 (2006.01)

(52) **U.S. Cl.**

CPC **H01R 13/6205** (2013.01); **H01R 13/645**
(2013.01); **H04M 1/0274** (2013.01)

(58) **Field of Classification Search**

CPC H01R 13/6205

ABSTRACT

Disclosed are interposer electrical connector embodiments including magnetic components used to facilitate interconnection of peripheral devices to standard input/output, or "I/O", connectors (such as USB connectors) of devices such as mobile communications products (e.g. smart phones, tablets, and personal computers). The interposer connector embodiments disclosed include those in which a plurality of discrete permanent magnets are arranged with magnetic poles aligned in the same orientation perpendicular to and on one side of the electrical interface. Other embodiments include a plurality of bar permanent magnets located on opposite sides of the interface with all poles of the same type directed at the interface, but each one opposing a ferromagnetic element. These arrangements provide self-aligning capabilities useful for electrical connections that have restrictions on visibility or connection approach geometries. Other embodiments have a single magnet per mated connector pair and magnetic pole pieces and/or actuators to concentrate magnetic flux providing the magnetic attractive force for a plurality of electrical connections.

20 Claims, 12 Drawing Sheets

